

**SECRET**  
**SECURITY INFORMATION**

# INFORMATION REPORT

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THIS IS UNEVALUATED INFORMATION

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If a scientist completed his man-hour assignment on one task, he was utilized for duties in another section or another problem. The ultimate responsibility for the problems of the Institute lay with the Director, and below him, with the Research Director and Technical Director. The Institute was not exclusively concerned with raw materials, since the research problems assigned to its institutes by the Ministry of Light Industry were given out on the basis of qualification of staff plus availability of space. The specialty of the Research Institute at Prague-Kyje did not prevent the Ministry from assigning it tasks not necessarily related to Raw Materials.

5. The problems assigned to the Research Institute, Raw Materials, during 1951, are listed below.
  - (a) Preparation of briquettes from ore to facilitate smelting.
  - (b) Determination of a method to utilize slag from manganese smelting.
  - (c) Determination of methods for utilizing waste bakelite paper.
  - (d) Extraction of gold from gold-poor sand.
  - (e) Utilization of broken glass from glass factories.
  - (f) Utilization of chestnuts.
  - (g) Utilization of cattle livers.
  - (h) Extraction of fats and oils.
  - (i) Utilization of waste cellulose.
  - (j) Utilization of cattle horns.
  - (k) Utilization of slag from aluminum production.
  - (l) Processing of stems from hops for use as textiles.
6. In 1952, problem (l) was cancelled, problems (d), (e), (f), and (g) were continued, and the remaining problems of 1951 were considered to have been solved. Other problems of 1952 were:
  - (a) Protection of bristles (for brushes) against decay.
  - (b) Discovery of materials for protection against gamma and X-rays.
  - (c) Removal of rubber from rubber-impregnated textiles.
  - (d) Production of high per cent alpha cellulose.
  - (e) Preparation of protective material against gamma rays.
7. Preparation of briquettes from ores was frequently requested of the Raw Materials Institute. The problem was to prepare small blocks of ore from the powdered material, to obtain a size of 20 mm cube, or 20 x 20 x 50 mm, or 70 x 70 x 70 mm. These briquettes were made by using an adhesive (eg, water glass, clay, cellulose). Requests to make such briquettes were still coming in in May 1952. The ores supplied were not subjected to analysis, because this was forbidden, but qualitative tests indicated that the ores were iron, pyrites, and some cobalt ores. The briquettes were supposedly prepared to assist in the smelting of the ores.

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8. [ ] the most important task assigned to the Raw Materials Institute was the problem of finding a protective material against gamma rays. Drs Kriz, Slaba, and Potucek were assigned the task. It was specified that lead sheets could not be employed.
- (a) In order to set up a standard of protection against gamma rays, a board of barite (barium sulfate) was prepared with a thickness of 10 mm. The protection which this gave against X-rays was measured by observing the intensity of light on a fluorescent screen. An arbitrary value of one was given to this barium standard.
  - (b) A board was then made of slag from the lead purification process used at lead smelter plants. This slag consisted of the oxides of lead, lead sulfide, and probably traces of antimony and silver. The board was prepared in a thickness of 10 mm using adhesives such as cement, viscose and water glass. One board of this slag gave as much protection as 3.5 barite boards, as observed on the fluorescent screen. Measurements of the light effect of the board shields on the fluorescent screen were estimated by unaided vision.
  - (c) The Raw Materials Institute received samples of ore from other countries. These ores were in paper sacks with identifying writing or printing on the paper, from which the Institute personnel guessed that the ores came from Bulgaria, Hungary, Poland, and Rumania. These ores arrived during January and February 1952. It was requested that these ores be made up into boards and tested for gamma ray protection. Hundreds of such boards were made, and the maximum protection afforded by the plates from these ores was never more than 70 per cent of the value of the lead slag plate. All findings were sent to the state radiological laboratory in Jachymov.
  - (d) No analysis of the ores so tested was permitted, but [ ] they resembled pitchblende. [ ] in mines in the Jachymov area [ ] there a similar type of ore covering veins of iron ore.
  - (e) No reason for this project was given to the Institute, and the government classified the work as secret, is not to be discussed.

9. The equipment available to the Raw Material Institute in Prague-Kyje was as follows:

- (a) Upper floor: two ice boxes, eight microscopes, two polarimeters, one or two spectrometers, two thermostatically controlled ovens, two water baths, drying ovens, six work tables, one photomicro camera, one microtome, one vacuum pump, one autoclave, one centrifuge, and other normal laboratory equipment.
- (b) Lower floor: nine work-benches, one binocular microscope, one Siemens X-ray apparatus, five analytical balances, three autoclaves, two vacuum pumps, one compressor, one acetylene torch, small electric ovens, water baths, metal "freezer", two viscosimeters, one saccharometer, one "butterometer", two Beckman thermometers, Braun Boweri pH meter, Bosch pH meter, small pumps and motors, a fume hood, hydraulic presses, transformer, water still (home made), rectifier, paper-cutter, ball-mill, glass blower, small mixers.

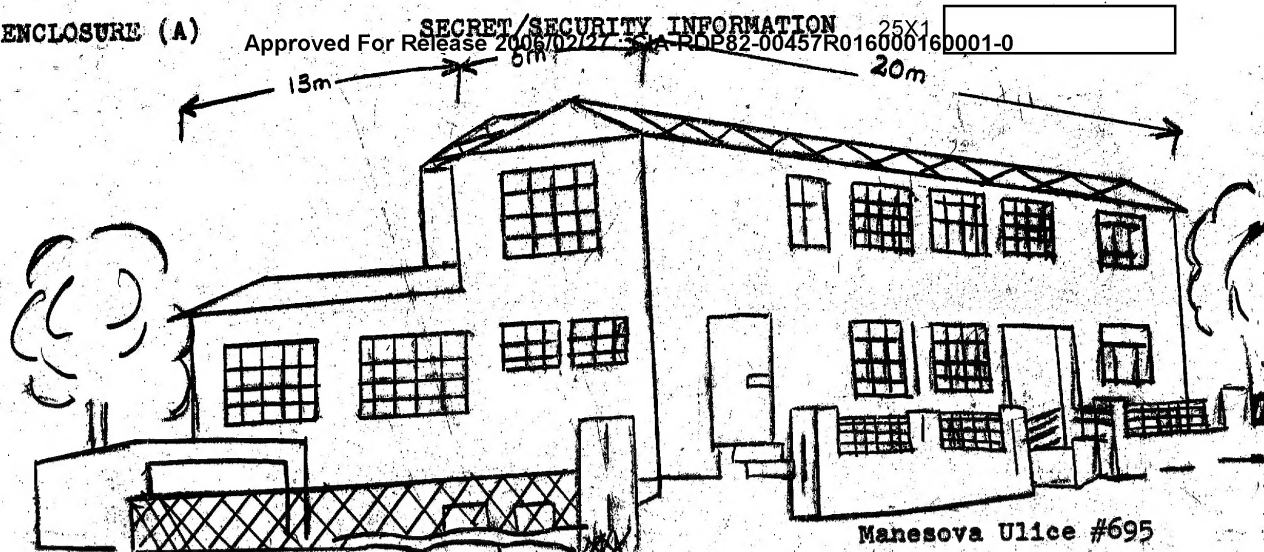
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- (c) Workshop: lathe, borer, shaper, mechanical hydraulic press, welding equipment, stock for material and equipment repair.
- (d) The library of the Raw Materials Institute had two thousand books (in German, Czech, French, English, and Russian). The Soviet chemical journal "Chemichestvo" was available. The library found it practically impossible to obtain foreign journals, even Soviet journals.

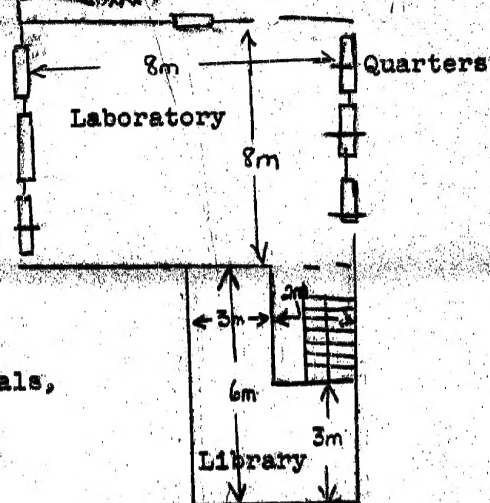
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Enclosure (A) Sketch of Research Institute, Raw Materials Ministry of Light Industry

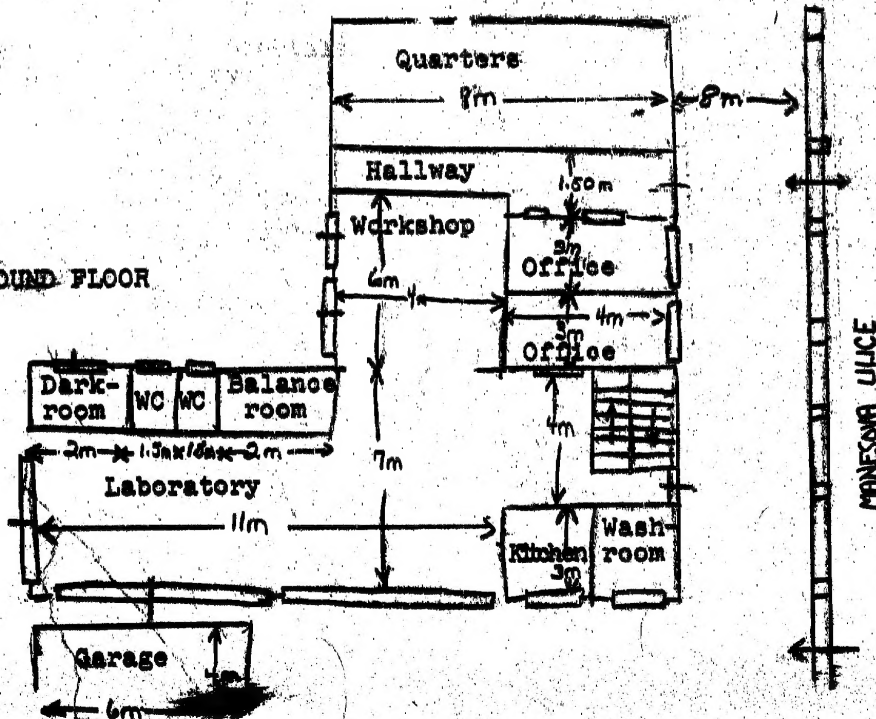
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 Research Institute, Raw Materials,  
 Ministry of Light Industry

GROUND FLOOR



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